



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
PO Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,284	07/25/2000	Lee H. Veneklasen	4901	7219

32588 7590 08/27/2003

APPLIED MATERIALS, INC.  
2881 SCOTT BLVD. M/S 2061  
SANTA CLARA, CA 95050

EXAMINER

VANORE, DAVID A

ART UNIT PAPER NUMBER

2881

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/625,284

Applicant(s)

VENEKLASEN ET AL.

Examiner

David A Vanore

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 July 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7. 6) ☐ Other: \_\_\_\_\_

---

***Claim Rejections - 35 USC § 102***

---

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17-24 stand rejected under 35 U.S.C. 102(b) as being clearly anticipated by Da Lin et al.

Regarding claims 17, 18, 20, and 22, Da Lin et al. teaches an immersion lens comprising a deflection coil (50), an excitation coil (22), a first pole piece (14), a second pole piece (24 and Col. 4 Lines 35-50) coaxial and downstream of the deflection coil, a sample support (20) downstream of the charged particle beam and deflection coil. Da Lin et al. teaches that both the pole pieces are comprised of soft iron, which is sufficiently equivalent to ferrite, and that both pole pieces serve as means to shield and restrain magnetic fields. Therefore, since pole piece 14 is intermediate the deflection coil and the support, and serves as a magnetic shield, the limitation of claim 17 is anticipated by Da Lin et al.

Regarding claim 19, the pole piece (24) is coaxial to the deflection coil (50) and extends around the deflection coils (Note Fig. 5 in view of Fig. 1).

Regarding claim 21, the uppermost surface of the magnetic shield means (24) is approximately parallel to a magnetic equipotential surface of a magnetic field generated by the excitation coil. This claim is anticipated by Da Lin et al. because it is broad. The claim does not pin down where in space the magnetic equipotential is in relation to the

---

~~upper surface, therefore the equipotential surface could be anywhere.~~ Given the behaviour of magnetic fields, the excitation coils will necessarily produce an equipotential surface somewhere in space that is approximately parallel to the upper, lower, or side surfaces of the magnetic shield means.

Regarding claim 23, Da Lin et al. teaches a detector (40) intermediate magnetic shield (24) and the support.

Regarding claim 24, Da Lin implicitly teaches that the support for the sample is non-magnetic and explicitly teaches an electrically conductive support. Da Lin et al. teaches that the support, and therefore the sample, is biased with an applied potential (Col. 6 Lines 3-18). Da Lin et al. also teaches that the application of a magnetic field in

---

the proximity of the sample would produce a negative effect on the resolution of secondary electrons emitted from the surface (Col. 5 Lines 55-68). Therefore, the support of Da Lin et al. is conductive and non-magnetic.

### ***Response to Arguments***

Applicant's arguments filed July 2, 2003 have been fully considered but they are not persuasive.

Applicant argues that element 24 is not a deflection coil. Examiner agrees. Element 24 is a second pole piece which acts as a magnetic housing and is composed of soft iron. Coils (50) scan the beam across the major surface of the substrate (Col. 7 Lines 1-15).

The pole pieces 14 and 24 are composed of soft iron and shield magnetic fields. The argument that the conical section is not located such that its upper surface is

~~approximately parallel to a magnetic equipotential surface of a magnetic field generated~~  
by an excitation coil is not persuasive. This limitation was addressed clearly in the last Office action. Restating the limitation as an argument does not refute the assertion made by the Examiner in the previous and currently standing rejection stated above.

The rejection of all claims is made final.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A Vanore whose telephone number is 703-306-0246. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on 703-308-4116. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.


Application/Control Number: 09/625,284  
Art Unit: 2881

Page 5

---

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

dav

  
JOHN R. LEE  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER 2800

---